PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION CONCERNING AMENDMENTS OF THE CLAIMS

(PCT Rule 62 and Administrative Instructions, Section 417)

To:

Assistant Commissioner for Patents
United States Patent and Trademark Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

in its capacity as International Preliminary Examining Authority

Date of mailing (day/month/year)	
21 June 2000 (21.06.00)	
International application No. PCT/IL99/00591	International filing date (day/month/year) 04 November 1999 (04.11.99)
Applicant VARICOM COMMUNICATIONS LTD. et al	

The International Bureau hereby informs the International Preliminary Examining Authority that no amendments under Article 19 have been received by the International Bureau (Administrative Instructions, Section 417).

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer

Nestor Santesso

Telephone No. (41-22) 338.83.38

ATENT COOPERATION TRE..TY

From the INTERNATIONAL BUREAU

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NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 21 June 2000 (21.06.00)	
International application No. PCT/IL99/00591	**Applicant's or agent's file reference** P-2033-PC
International filing date (day/month/year) 04 November 1999 (04.11.99)	**Priority date** (day/month/year) 04 November 1998 (04.11.98)
Applicant KAFRI, Oded	

1. The designated Office is hereby notified of its election made:

[X] in the demand filed with the International Preliminary Examining Authority on:

27 April 2000 (27.04.00)

[ ] in a notice effecting later election filed with the International Bureau on:

2. The election [X] was

[ ] was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO **34, chemin des Colombettes** **1211 Geneva 20, Switzerland**	Authorized officer Nestor Santesso
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

ATENT COOPERATION TRE. Y

From the INTERNATIONAL BUREAU

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NOTIFICATION OF THE RECORDING OF A CHANGE

(PCT Rule 92bis.1 and Administrative Instructions, Section 422)

To:

EITAN, PEARL, LATZER & COHEN-ZEDEK
Gav Yam Center 2
Shenkar Street 7
46725 Herzlia
ISRAËL

Date of mailing (day/month/year)
26 April 2000 (26.04.00)

Applicant's or agent's file reference
P-2033-PC

IMPORTANT NOTIFICATION

International application No.
PCT/IL99/00591

International filing date (day/month/year)
04 November 1999 (04.11.99)

1. The following indications appeared on record concerning:

[X] the applicant [ ] the inventor [ ] the agent [ ] the common representative

Name and Address
VERITAS TECHNOLOGY SOLUTIONS LTD.
She'erit Israel 37
68165 Tel-Aviv
Israel

State of Nationality: IL
State of Residence: IL
Telephone No.:
Facsimile No.:
Teleprinter No.:

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

[ ] the person [X] the name [ ] the address [ ] the nationality [ ] the residence

Name and Address
VARICOM COMMUNICATIONS LTD.
She'erit Israel 37
68165 Tel-Aviv
Israel

State of Nationality: IL
State of Residence: IL
Telephone No.:
Facsimile No.:
Teleprinter No.:

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

[X] the receiving Office
[ ] the International Searching Authority
[ ] the International Preliminary Examining Authority
[X] the designated Offices concerned
[ ] the elected Offices concerned
[ ] other:

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer
I. Britel

Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

16

Applicant's or agent's file reference P-2033-PC	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/IL99/00591	International filing date *(day/month/year)* 04 NOVEMBER 1999	Priority date *(day/month/year)* 04 NOVEMBER 1998
International Patent Classification (IPC) or national classification and IPC Please See Supplemental Sheet.		
Applicant [VERITA TECHNOLOGY SOLUTIONS LTD.] VARICOM COMMUNICATIONS LTD.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets.

   ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

   I ☒ Basis of the report

   II ☐ Priority

   III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability

   IV ☐ Lack of unity of invention

   V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   VI ☐ Certain documents cited

   VII ☐ Certain defects in the international application

   VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
27 APRIL 2000	06 JULY 2000
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer KRISTA ZELE Telephone No. (703) 305-4012

Form PCT/IPEA/409 (cover sheet) (July 1998) ★

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/IL99/00591

I. Basis of the report

1. With regard to the **elements** of the international application: *

[X] the international application as originally filed

[X] the description:
pages 1-12 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

[X] the claims:
pages 13-15 , as originally filed
pages NONE , as amended (together with any statement) under Article 19
pages NONE , filed with the demand
pages NONE , filed with the letter of

[X] the drawings:
pages 1-6 , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

[X] the sequence listing part of the description:
pages NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

[ ] the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

[ ] the language of publication of the international application (under Rule 48.3(b)).

[ ] the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

[ ] contained in the international application in printed form.

[ ] filed together with the international application in computer readable form.

[ ] furnished subsequently to this Authority in written form.

[ ] furnished subsequently to this Authority in computer readable form.

[ ] The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

[ ] The statement that the information recorded in computer readable form is identical to the writen sequence listing has been furnished.

4. [X] The amendments have resulted in the cancellation of:

[X] the description, pages none

[X] the claims, Nos. none

[X] the drawings, sheets/~~fig~~ none

5. [ ] This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

** Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

***Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/IL99/00591

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. statement

Novelty (N)	Claims	none	YES
	Claims	1-14	NO
Inventive Step (IS)	Claims	none	YES
	Claims	1-14	NO
Industrial Applicability (IA)	Claims	1-14	YES
	Claims	none	NO

2. citations and explanations (Rule 70.7)

Claims 1-9 lack novelty under PCT Article 33(2) as being anticipated by Hyde-Thomson, US Patent 5,557,659).

As to Claim 1, with respect to Figures 7-8, Hyde-Thomson teaches a method for forwarding a telephone call, in which the caller receives a "no answer" or "busy" signal, comprising the steps of:
routing the incoming telephone call to a dedicated server (Col. 4, lines 1-9);
identifying the number dialed (Col. 4, lines 1-9);
associating an email address with said dialed number (Col. 4, lines 1-9); and
forwarding the voice message as an email message to said email address (Col. 4, lines 1-9 and Col. 13, lines 12-41).

As to Claims 2,5, Hyde-Thomson teaches a method according to claim 1, wherein said step of forwarding comprises the steps of:
digitizing the voice message into a wave file (Figure 8, label 803); and
attaching said wave file to the email message (Figure 8, label 808).

As to Claims 3,6, Hyde-Thomson teaches a method according to claim 1, and further comprising the steps of:
storing said voice message in a voice box (Figure 3, label 302); and
the recipient retrieving said voice message by telephone (Figure 3, label 308).

As to claim 4, with respect to Figures 7-8, Hyde-Thomson teaches a method for forwarding a telephone call in email message format to a recipient, the method comprising the steps of:
the caller dialing a dedicated telephone numbr (Col. 4, lines 1-9);
identifying the telephone number of the caller (Col. 4, lines 1-9);
the caller entering the telephone number of the recipient of (Continued on Supplemental Sheet.)

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

CLASSIFICATION:
The International Patent Classification (IPC) and/or the National classification are as listed below:
IPC(7): H04M 1/64; H04M 11/00; H04M 1/32; H04Q 7/20 and US Cl.: 379/67.1, 88.13, 88.17, 88.25, 93.23, 100.06, 110.01; 455/415,417,445, 461; 358/402,442; 709/204,206

V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):
the telephone call (Col. 4, lines 1-9);
associating an email address with the telephone number of the recipient (Col. 4, lines 1-9); and
forwarding the voice message as an email message to said email address (Col. 4, lines 1-9 and Col. 13, lines 12-41).

As to Claim 7, Hyde-Thomson teaches a method according to claim 4, and further comprising the step of:
verifying whether the caller's telephone number matches the registered telephone number of the caller (Figure 8, label 805).

As to Claim 8, Hyde-Thomson teaches a method according to claim 7, and if the identified telephone number does not match the registered telephone number of the caller, further comprising the step of:
only forwarding the voice message if a correct password and the registered telephone number associated with the caller is verified (Figure 8, label 807).

As to Claim 9, Hyde-Thomson teaches a method according to claim 4, and only if the recipient telephone number is listed as being associated with a registered member, allowing the forwarding of the message (Figure 8, label 808).

Claims 10-14 lack an inventive step under PCT Article 33(3) as being obvious over Hyde-Thomson in view of Bobo, II, US Patent 5,657,507.

As to claim 10, Hyde-thomson, teaches a method for forwarding a voice message, but not facsimile message, in email message format to a recipient, the method comprising the steps of:
the caller dialing a dedicated voice mail but not facsimile number;
identifying the telephone number of the caller (Col. 4, lines 1-9);
the caller entering the voice mail, but not facsimile, of the recipient of the voice mail, but not facsimile;
associating an email address with the voice mail, but not facsimile, number of the recipient; and
forwarding the voice mail, but not facsimile, message in email message format to said email address (Figure 8 and Col. 13, lines 12-41).
Hyde-Thomson does not teach facsimile messages but teaches integration of various message types and thereby suggests facsimile messages (Col. 2, lines 27-35). Bobo, II teaches facsimile message reception (Figures 5-6). Therefore, it would have been obvious to combine Hyde-Thomson with Bobo, II for receiving facsimile messages and forwarding facsimile messages as email messages.

As to claim 11, Hyde-Thomson teaches a method according to claim 10, wherein said step of forwarding comprises the steps of:
not converting the facsimile message into a TIF file; and
not attaching said TIF file to the email message. Bobo, II teaches conversion of facsimile messagees into TIF files (Figure 6). Therefore, it would have been obvious to combine Hyde-Thomson with Bobo, II for attaching TIF files to email messages.

As to Claim 12, Hyde-Thomson teaches a method according to claim 10, and further comprising the step of:
verifying whether the caller's telephone number matches the registered telephone number of the caller (Figure 8, label 805).

As to Claim 13, Hyde-Thomson teaches a method according to claim 12, and if the identified telephone number does not match the registered telephone number of the caller, further comprising the step of:
only forwarding the caller's number, but not facsimile number, associated with the caller is verified (Figure 8, label 808).

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Bobo, II teaches forwarding a caller's facsimile number (Col. 12, Table 1). Therefore, it would have been obvious to combine Hyde-Thomson with Bobo, II for forwarding a facsimile number in an email message.

14 a method according to claim 10, and only forwarding the voice mail, but not facsimile, message if the recipient voice mail, but not facsimile, number is a telephone number listed as being associated with a registered member. Bobo, II teaches forwarding a caller's facsimile number (Col. 12, Table 1). Therefore, it would have been obvious to combine Hyde-Thomson with Bobo, II for only forwarding a facsimile number.

---------- NEW CITATIONS ----------
none

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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H04M 1/64, 11/00, 1/32, H04Q 7/20

A1

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60/107,017 4 November 1998 (04.11.98) US

(71) Applicant *(for all designated States except US)*: VARICOM COMMUNICATIONS LTD. [IL/IL]; She'erit Israel 37, 68165 Tel–Aviv (IL).

(72) Inventor; and
(75) Inventor/Applicant *(for US only)*: KAFRI, Oded [IL/IL]; Ehud Street 3, 84160 Beer Sheva (IL).

(74) Agent: EITAN, PEARL, LATZER & COHEN–ZEDEK; Gav Yam Center 2, Shenkar Street 7, 46725 Herzlia (IL).

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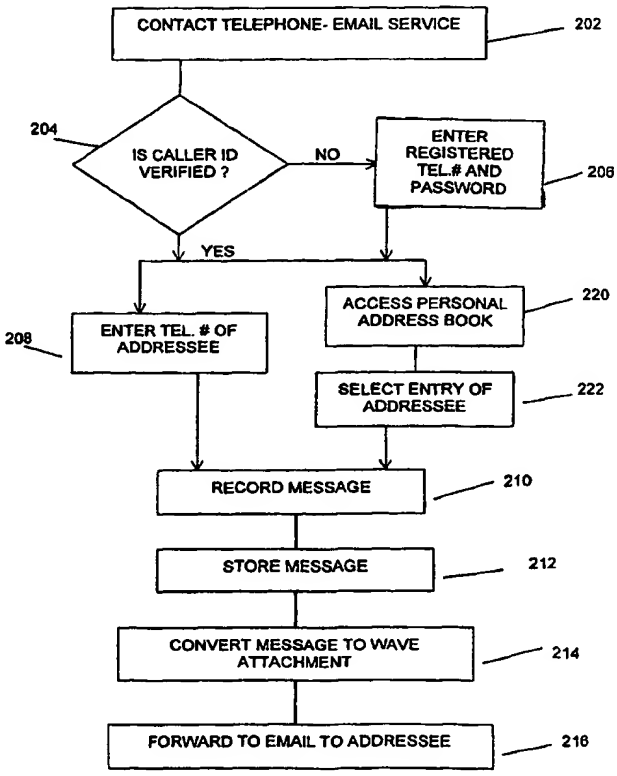
Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: A METHOD FOR STORING AND FORWARDING VOICE AND FACSIMILE MESSAGES USING AN E–MAIL PLATFORM

(57) Abstract

A method for forwarding and storing a telephone call (204) from a caller receiving a "no answer" or "busy" signal is provided. In one embodiment, the telephone call is converted to a wave file (214) for attachment as an email message (216). In a further embodiment, a facsimile message can be forwarded as an email attachment. The telephone calls and facsimile messages may be replied to by the recipient for onward forwarding to the initial caller.



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A METHOD FOR STORING AND FORWARDING VOICE AND FACSIMILE MESSAGES USING AN E-MAIL PLATFORM

FIELD AND BACKGROUND OF THE INVENTION

Today, PTT's offer voice boxes as a service. One of the major producers of such a system is Comverse Technology Inc. The voice box is illustrated with reference to the block diagram illustration of Fig. 1, shows a message storing system, generally designated 10. When a caller 12 dials the receiver's telephone number 18 and does not receive an answer, the PBX 14, linking the user with the PSTN, routes the call to the receiver's voice box 16, digitizes the message and stores it on a hard disk. Messages can be retrieved later by the receiver 18 contacting the dedicated voice box 16, generally stored at the PTT site.

The implementation of such systems is far from being trivial since PTT's, which deal with millions of customers need to provide a service in real time. For example, if one calls from city A to city B and does not receive an answer, he should immediately be connected to the hard disk which contains the allocated space of the receiver. Since the number of hard disks is huge (one per telephone line), this task requires special hardware and software that is not easy to make. Moreover, in order to leave a message for a person in a city B one has to call city B, in spite of the fact that if the line of the receiver in city B is busy, the PBX knows that it is busy without calling city B. In addition, leaving a message for a person in City B costs exactly the same as calling city B.

Another form of Internet Telephony messaging available today is the sending of facsimiles (fax) to an email address. Such a service is provided by

Efax, of Palo Alto, California, which provides registered subscribers or members with a personal fax number, as described on their web site (http//:www.efax.com). Each personal fax number is associated with an email address of the member. Fax messages which are sent to the personal fax number of the member are converted by "efax.com" into a format readable by email and then sent to the member in email format.

The fax to email service also requires the supplier to provide a large storage capacity for the messages being received as well as telephone lines for each personal fax number. Furthermore, the personal fax number is generally located in the code area of the supplier and thus persons sending messages who are outside the dialing area, will need to make a long distance or international call to send the fax.

At present, telephony messaging via PSTN or the Internet is one-way and is restricted to sending messages to a person who is signed-up or registered as a user with the service.

SUMMARY OF THE INVENTION

The present invention is based on the unified number concept, namely, that for each telephone number, there is an e-mail box with the same number. By means of a dedicated server, e-mail messages may be sent to e-mail boxes from a telephone as well as from a computer. In addition, voice messages and text messages may be forwarded to a telephone.

A method for forwarding and storing a telephone call from a caller receiving a "no answer" or "busy" signal is provided. Furthermore, a method for forwarding and storing a telephone call or facsimile message in email message format is also provided.

There is therefore provided, in accordance with a preferred embodiment of the present invention, a method for forwarding a telephone call, in which the caller receives a "no answer" or "busy" signal. The method includes the steps of:

routing the incoming telephone call to a dedicated server;

identifying the number being dialed;

associating an email address with the dialed number; and

forwarding the voice message as an email message to the email address.

In addition,, there is provided, in accordance with a preferred embodiment of the present invention, a method for forwarding a telephone call in email message format to a recipient. The method includes the steps of:

the caller dialing a dedicated telephone number;

identifying the telephone number of the caller;

the caller entering the telephone number of the recipient of the telephone call;

associating an email address with the telephone number of the recipient; and

forwarding the voice message as an email message to the email address.

Furthermore, in accordance with a preferred embodiment of the present invention, the step of forwarding includes the steps of:

digitizing the voice message into a wave file; and

attaching the wave file to the email message.

Furthermore, in accordance with a preferred embodiment of the present invention, the method further includes the steps of:

storing the voice message in a voice box; and

the recipient retrieving the voice message by telephone.

Additionally, there is provided, in accordance with a preferred embodiment of the present invention, a method for forwarding a facsimile message in email message format to a recipient, the method includes the steps of:

the caller dialing a dedicated facsimile number;

identifying the telephone number of the caller;

the caller entering the facsimile number of the recipient of the facsimile;

associating an email address with the facsimile number of the recipient; and

forwarding the facsimile message in email message format to the email address.

The method further includes the step of verifying whether the caller's telephone number matches the registered telephone number of the caller. If the identified telephone number does not match the registered telephone number of

the caller, the method further including the step of only forwarding the facsimile message if a correct password and the registered telephone number associated with the caller is verified.

Alternatively, only if the recipient telephone/facsimile number is listed as being associated with a registered member is the voice/facsimile message forwarded.

Furthermore, in accordance with a preferred embodiment of the present invention, the step of forwarding includes the steps of converting the facsimile message into a TIF file and attaching said TIF file to the email message.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be understood and appreciated more fully from the following detailed description taken in conjunction with the appended drawings in which:

Fig. 1 is a block diagram illustration of a prior art voice box;

Fig. 2 is a detailed schematic illustration of an unified messaging system, constructed and operative in accordance with a preferred embodiment of the present invention;

Fig. 3 is a block diagram illustration of the operation of the unified messaging system of Fig. 2 for forwarding and storing voice messages in email format;

Fig. 4 is a schematic illustration of the personal details of a subscriber to the system of Fig. 2;

Fig. 5 is a schematic flow chart illustration of an embodiment of the operation of sending and forwarding messages utilizing the system of Fig. 2; and

Fig. 6 is a schematic flow chart illustration of a further embodiment of the operation of sending and forwarding messages utilizing the system of Fig. 2.

DESCRIPTION OF THE PRESENT INVENTION

Reference is now made to Fig 2, which is a schematic illustration of the unified messaging system, generally designated 20, constructed and operative in accordance with a preferred embodiment of the present invention.

The unified messaging system 20 comprises a local telephone-email server 22, which is connected to a PSTN (or PBX) line 24. Voice messages are called in to a dedicated telephone number associated with the telephone-email server 22. The caller designates the addressee and the telephone-email server 22 prepares an email message with a wave attachment which is then forwarded, via the Internet 52 to the email box 54 of the addressee.

The telephone-email server 22 is similar to the proxy server described in PCT Patent Application: PCT/IL99/00516 assigned to the Assignees of the present invention and incorporated herein by reference.

The telephone-email server 22 comprises a Computer Telephone Integration (CTI) card 26 connected to a wave API (Application Program Interface) 28 and a message storage device 30. The telephone-email server 22 further comprises components such as a voice proxy telephone server 32 and a transport provider 34 for receiving and forwarding voice/text messages.

A method of sending voice messages between remotely located telephones and text messages as voice messages from a computer to remotely located telephones, utilizing e-mail properties, is also described in PCT Patent Application: PCT/IL99/00516.

Reference is now also made to Fig. 3, which is a block diagram illustration of the operation of the unified messaging system 20 for forwarding and storing voice messages in email boxes 54, utilizing the telephone-email server 22.

If the receiving line 18 does not answer for any of various reasons, the caller 12 is not routed to the receiver's box, but instead is routed via the PBX 14 to a local telephone-email server 22 by a suitable telephone switching device. An example of a telephone switching device for routing incoming calls is described in Israel Patent Application No: 123086, assigned to the common Assignees of the present invention and incorporated herein by reference.

When the telephone-email server 22 receives a call routed from the PBX 14, it identifies the number (of the receiver) being dialed and by accessing the database records stored in the lookup table (LUT) of the message storage device 30, can identify the receiver's e-mail address. The voice message can be stored and/or digitized and attached to the e-mail message as a wave file, to be sent through the Internet 52, to the e-mail box 54 of the receiver. The receiver can access his email box 54 through his personal computer 56, as required.

The message storage device 30 is configured to maintain details of members/subscribers of the service and a database type record (lookup table (LUT)) consisting of at least the e-mail addresses associated with named addressees.

Reference is now made to Fig. 4, which is a schematic illustration of a record, generally referenced 56 for a member/subscriber. The members record includes the member's name 64, registered telephone number 66, email address 68, PIN (personal identification number) or password 70, or any other means of

restricting regular senders from using this service, and any other additional information 72. It will be appreciated that the membership record 56 is not restricted to the amount of information which may be added.

The exemplary lookup table (LUT), shown in Fig. 4 comprises a listing, which is a personal address book for the member, and includes for each entry, the name of an addressee 58 and email address 60 associated with the addressee. For example, entry 1 has "joe smith" as the name of the addressee with the email address of "smithjoe@isp.com".

In order to receive a message, either the sender or the receiver needs to be a subscriber to the service provided by the telephone-email server 22. A message can be sent to a receiver who is not a subscriber, provided that the sender is a subscriber. Similarly, message can be sent to a member by a person receiver is not a subscriber. Thus, the system has the advantage over prior art systems in that phone/ fax messages can be sent or received by a subscriber and phone/ fax messages can be sent to an email address of a recipient who is not a subscriber, as will be described hereinbelow.

The operation of the service utilizing the telephone-email server 22 for sending and forwarding messages is now described with reference to the flow chart diagram of Fig. 5.

To send a voice message to the e-mail address of any recipient, the caller (who is a subscriber to the service) contacts the service by dialing a dedicated service number (step 202). The service identifies the caller by the caller-ID (query box 204). If the caller is calling from a telephone unknown to the service, the

password (PIN) as well as the telephone number registered in the service is entered (step 206).

Once the caller is identified (step 204), the caller enters the telephone number of the person the caller wishes to send the message (step 208) and then records his message (step 210).

As described in PCT Patent Application: PCT/IL99/00516, the telephone-email server 22 receives the telephone (or fax) message which is recorded (step 212). The incoming message is converted to a wave attachment (step 214) utilizing the wave device associated with TAPI (Telephone Application Program Interface) phone line directly using the Wave API (Application Program Interface) 28. The message with wave attachment file is then sent via the Internet to the email address associated with the addressee (step 216).

Alternatively, once the caller is identified (step 204), the caller can access his personal address book (step 220) and then select the entry number of addressee to whom the call should be sent (step 222). The telephone message is then recorded (step 210) and steps 212 –216 are performed to send the message to the email address of the addressee.

Optionally, the voice message can also be stored for a limited time period in a voice mailbox of a voicemail system, as described in PCT Patent Application: PCT/IL99/00516.

Alternatively and optionally, the recipient of a message can send a reply without the necessity of becoming a member or subscriber to the service, as described hereinbelow with reference to the flow chart diagram of Fig. 6.

To send a message, the recipient (who is not a member) dials the contacts the service by dialing a dedicated service number (step 232). The service (which cannot identify the caller by the caller-ID) requests the caller (recipient) to enter the telephone number of the person the caller wishes to send the message (step 234). If the telephone number is listed as being associated with a registered member, the message is then recorded (step 236).

As described above in steps 212-216, the incoming message is converted to a wave attachment and then sent via the Internet to the email address associated with the member (steps 238-242).

In a similar manner to that described with reference to Figs. 5 and 6, fax messages may be send to any email address and a fax received by the member of the service. The fax message is forwarded as a TIF file. For facsimile messages, a separate dedicated server having its own access telephone number is preferably used. In this case, the CTI card 26 is a card configured for converting facsimile messages to TIF format.

Thus, the telephone-email server 22 in addition to receiving a call routed from the PBX and storing voice messages can also send and retrieve voice and fax messages to email addresses. In other words, the telephone-email server 22 effectively acts as an unified message box for voice, e-mail and fax messages.

The unified messaging system 20 has an advantage over prior art systems in that the telephone-email server 22 can service many users per telephone line, since the unified messaging system 20 is not restricted by the number of members but rather by the number of users at any one time. For example, 5000 users are expected to send an average total of 120 messages per

day, utilizing a phone line for 2 minutes per message (that is 4 hours per day). Thus, in a 12 hour day, one line can service 15,000 members and 16 lines can service 240,000 members. In contrast, prior art voice boxes require a dedicated phone number for each member, that is 5000 lines for 5000 users.

It will be appreciated by persons knowledgeable in the art, that the unified messaging system of the present invention has advantages over the prior art systems, namely:

1. The receiver has the choice of obtaining his messages either through the telephone or through the computer.
2. The sender can send a message to a receiver, either from the telephone or from the computer.
3. An e-mail can be received (as a voice message) without having a computer.
4. An e-mail can be send through the telephone as a voice attachment e-mail, without having a computer.
5. The receiver can forward his voice messages through his e-mail to one or several addressees.
6. The receiver can filter and forward his voice mail to a telephone, his or any other, of his choice.

It will be further appreciated by persons skilled in the art that the present invention is not limited by what has been particularly shown and described herein above. Rather the scope of the invention is defined by the claims which follow:

CLAIMS

1. A method for forwarding a telephone call, in which the caller receives a "no answer" or "busy" signal, comprising the steps of:

routing the incoming telephone call to a dedicated server;

identifying the number being dialed;

associating an email address with said dialed number; and

forwarding the voice message as an email message to said email address.

2. A method according to claim 1, wherein said step of forwarding comprises the steps of:

digitizing the voice message into a wave file; and

attaching said wave file to the email message.

3. A method according to claim 1, and further comprising the steps of:

storing said voice message in a voice box; and

the recipient retrieving said voice message by telephone.

4. A method for forwarding a telephone call in email message format to a recipient, the method comprising the steps of:

the caller dialing a dedicated telephone number;

identifying the telephone number of the caller;

the caller entering the telephone number of the recipient of the telephone call;

associating an email address with the telephone number of the recipient; and

forwarding the voice message as an email message to said email address.

5. A method according to claim 4, wherein said step of forwarding comprises the steps of:

digitizing the voice message into a wave file; and

attaching said wave file to the email message.

6. A method according to claim 4, and further comprising the steps of:

storing said voice message in a voice box; and

the recipient retrieving said voice message by telephone.

7. A method according to claim 4, and further comprising the step of:

verifying whether the caller's telephone number matches the registered telephone number of the caller.

8. A method according to claim 7, and if the identified telephone number does not match the registered telephone number of the caller, further comprising the step of:

only forwarding the voice message if a correct password and the registered telephone number associated with the caller is verified.

9. A method according to claim 4, and only if the recipient telephone number is listed as being associated with a registered member, allowing the forwarding of the message.

10. A method for forwarding a facsimile message in email message format to a recipient, the method comprising the steps of:

the caller dialing a dedicated facsimile number;

identifying the telephone number of the caller;

the caller entering the facsimile number of the recipient of the facsimile;

associating an email address with the facsimile number of the recipient; and

forwarding the facsimile message in email message format to said email address.

11. A method according to claim 10, wherein said step of forwarding comprises the steps of:

converting the facsimile message into a TIF file; and

attaching said TIF file to the email message.

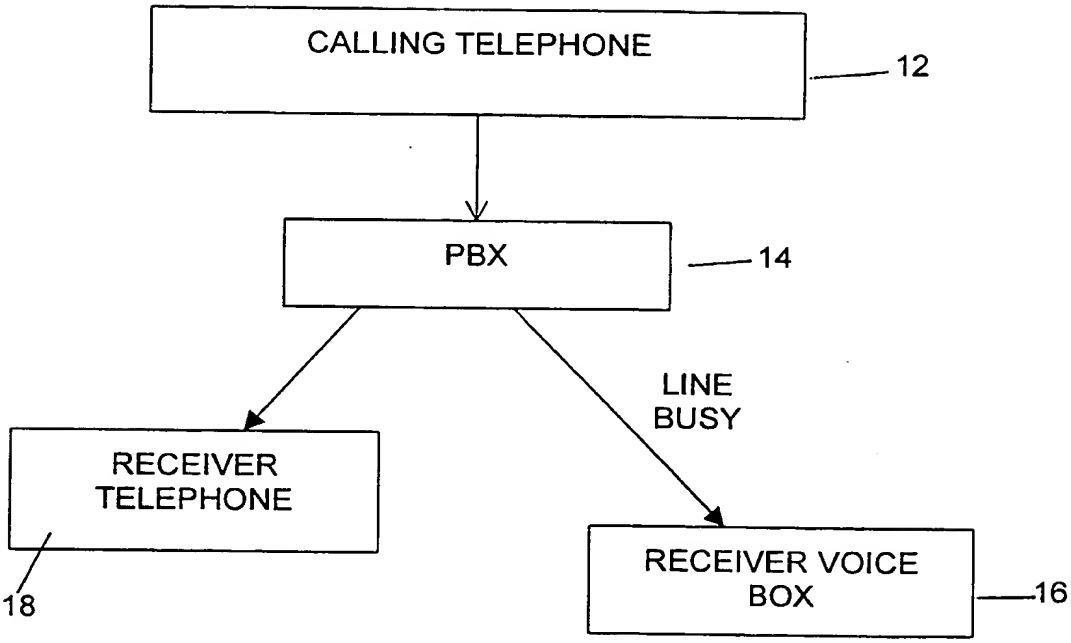
12. A method according to claim 10, and further comprising the step of:

verifying whether the caller's telephone number matches the registered telephone number of the caller.

13. A method according to claim 12, and if the identified telephone number does not match the registered telephone number of the caller, further comprising the step of:

only forwarding the facsimile message if a correct password and the registered telephone number associated with the caller is verified.

14. A method according to claim 10, and only forwarding the facsimile message if the recipient facsimile number is a telephone number listed as being associated with a registered member.



PRIOR ART

FIG. 1

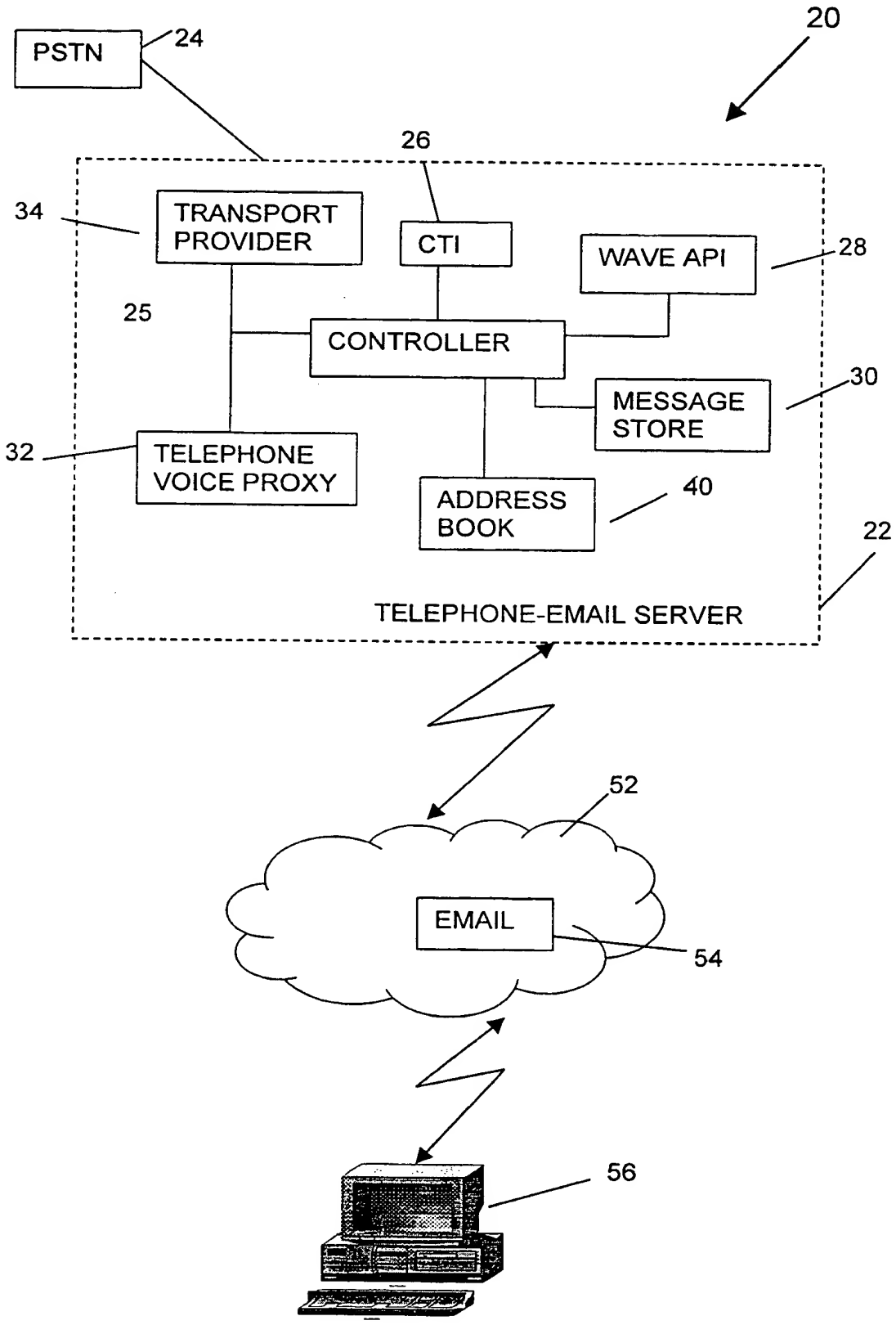

20
PSTN
24
26
34
TRANSPORT PROVIDER
CTI
WAVE API
28
25
CONTROLLER
30
MESSAGE STORE
32
TELEPHONE VOICE PROXY
ADDRESS BOOK
40
22
TELEPHONE-EMAIL SERVER
52
EMAIL
54
56

FIG. 2

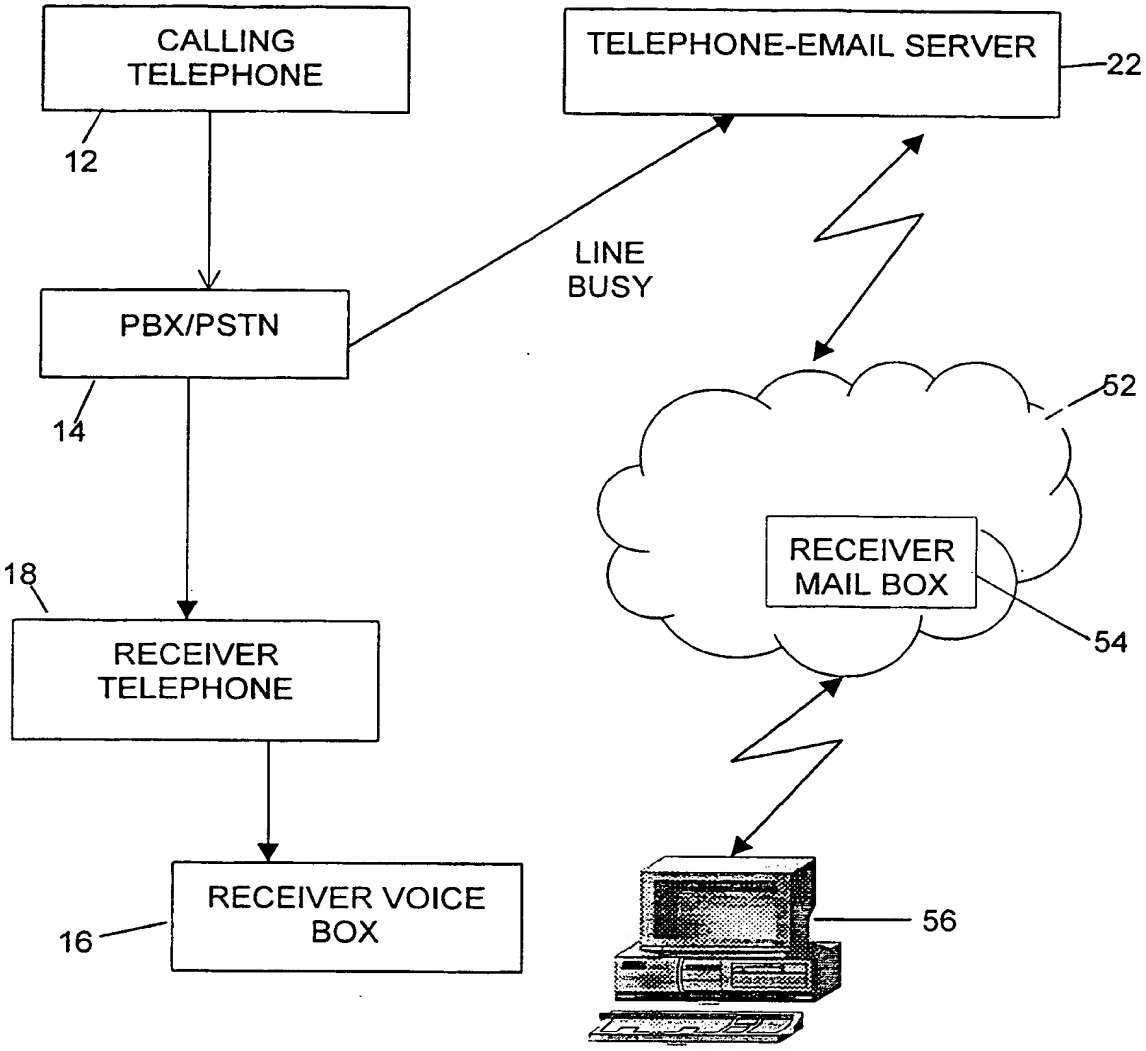
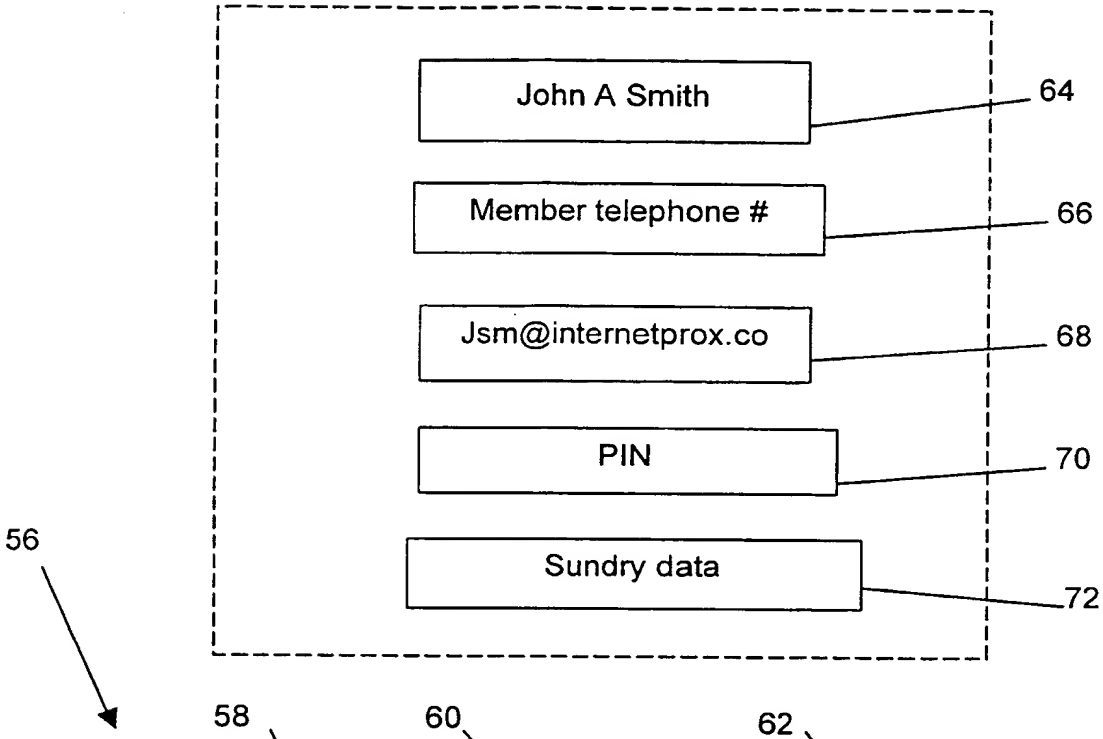

CALLING TELEPHONE
12
TELEPHONE-EMAIL SERVER
22
LINE BUSY
PBX/PSTN
14
52
RECEIVER MAIL BOX
54
18
RECEIVER TELEPHONE
RECEIVER VOICE BOX
16
56

FIG. 3



Entry #	Entry Name	Address
1	Joe Smith	smithjoe@isp.com
2	Fred Jones	F_jones@interp.com
3		
4		
5		
6		
7		
8		
9		
10		

FIG. 4

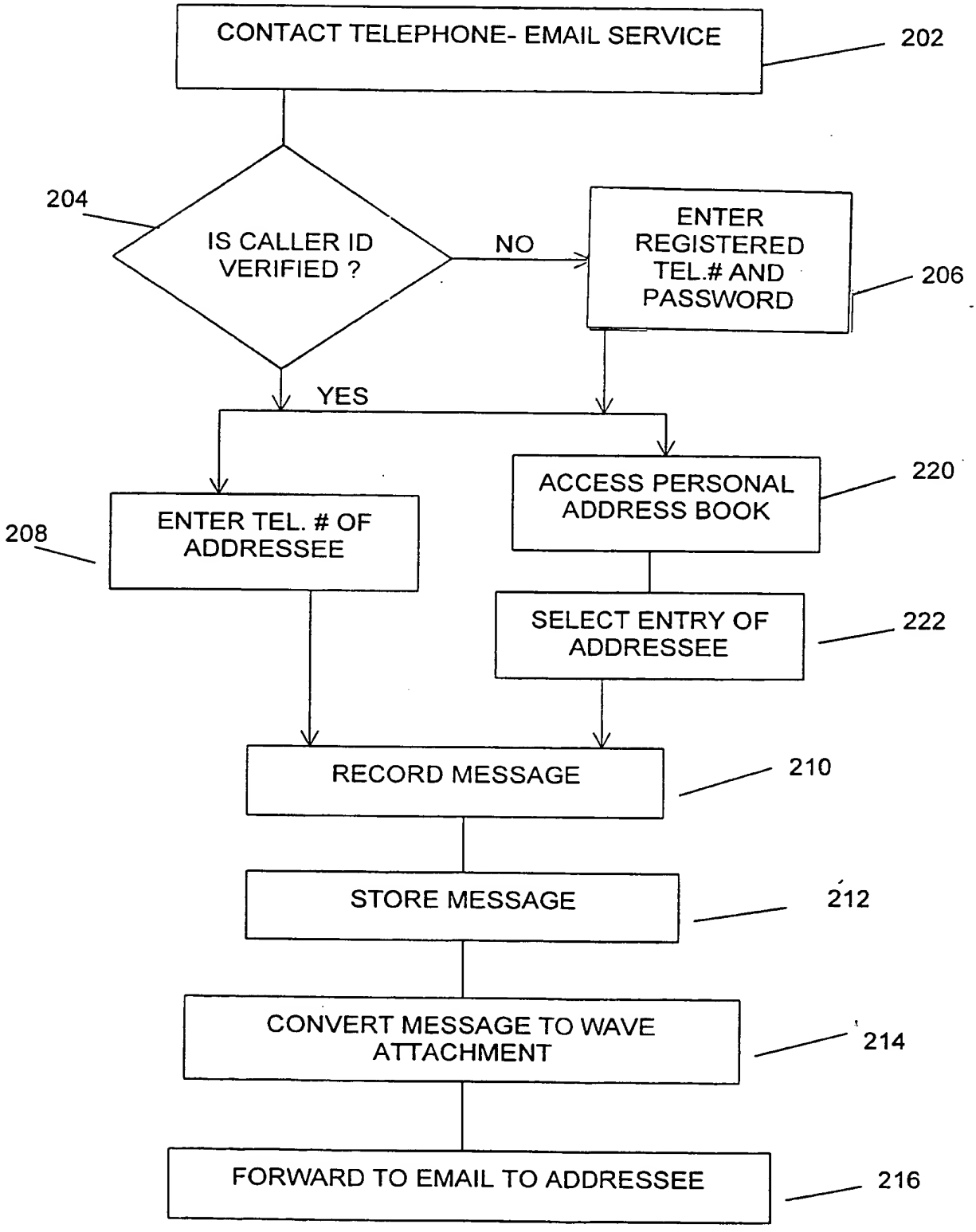

CONTACT TELEPHONE- EMAIL SERVICE
202
204
IS CALLER ID VERIFIED ?
NO
ENTER REGISTERED TEL.# AND PASSWORD
206
YES
ACCESS PERSONAL ADDRESS BOOK
220
208
ENTER TEL. # OF ADDRESSEE
SELECT ENTRY OF ADDRESSEE
222
RECORD MESSAGE
210
STORE MESSAGE
212
CONVERT MESSAGE TO WAVE ATTACHMENT
214
FORWARD TO EMAIL TO ADDRESSEE
216

FIG. 5

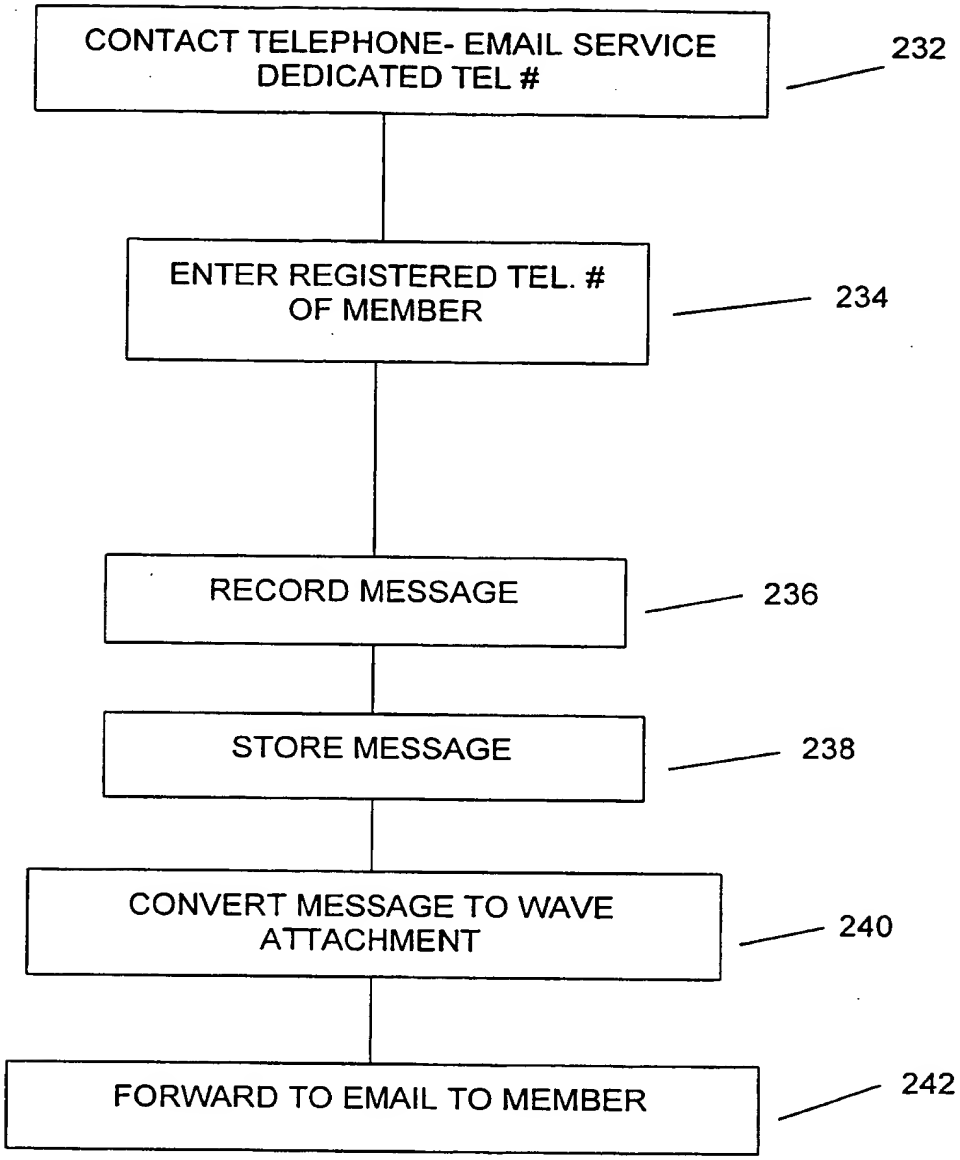

CONTACT TELEPHONE- EMAIL SERVICE DEDICATED TEL #
232
ENTER REGISTERED TEL. # OF MEMBER
234
RECORD MESSAGE
236
STORE MESSAGE
238
CONVERT MESSAGE TO WAVE ATTACHMENT
240
FORWARD TO EMAIL TO MEMBER
242

FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL99/00591

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :H04M 1/64; H04M 11/00; H04M 1/32; H04Q 7/20
US CL :Please See Extra Sheet.
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 379/67.1, 88.13, 88.17, 88.25, 93.23, 100.06, 110.01; 455/415,417,445, 461; 358/402, 442; 709/204, 206

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

none

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EAST and WEST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,557,659 A (HYDE-THOMSON) 17 September 1996, Col. 2, lines 26-35, Col. 4, lines 1-9 and Figure 7.	1-9
X	US 5,742,905 A (PEPE et al.) 21 April 1998, Col. 5, lines 54-67, Col. 6, lines 1-19.	1,4,10
X	US 5,742,668 A (PEPE et al.) 21 April 1998, Col. 5, lines 30-68.	1,4,10
X	US 5,568,540 A (GRECO et al.) 22 October 1996, Col. 2, lines 6-28.	1,4,10
X	US 5,675,507 A (BOBO, II) 07 October 1997, Col. 5, lines 1-40 and Figures 4-6.	1-14
A,E	US 6,023,345 A (BLOOMFIELD) 08 February 2000, Figure 8.	10-14

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search	Date of mailing of the international search report
23 FEBRUARY 2000	15 MAR 2000
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer Allan Hoosain Telephone No. (703) 305-4012

Form PCT/ISA/210 (second sheet)(July 1992)*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL99/00591

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,E	US 6,025,931 A (BLOOMFIELD) 15 February 2000, Figure 8.	10-14
A,P	US 5,848,137 A (HSIAO) 08 DECEMBER 1998, Col. 2, lines 1-45.	1,10,14

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL99/00591

A. CLASSIFICATION OF SUBJECT MATTER:
US CL :

379/67.1, 88.13, 88.17, 88.25, 93.23, 100.06, 110.01; 455/415,417,445, 461; 358/402,442; 709/204,206

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL99/00591

A. CLASSIFICATION OF SUBJECT MATTER
IPC(6) :H04M 1/64; H04M 11/00; H04M 1/32; H04Q 7/20
US CL :Please See Extra Sheet.
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 379/67.1, 88.13, 88.17, 88.25, 93.23, 100.06, 110.01; 455/415,417,445, 461; 358/402, 442; 709/204, 206

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

none

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EAST and WEST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	US 5,557,659 A (HYDE-THOMSON) 17 September 1996, Col. 2, lines 26-35, Col. 4, lines 1-9 and Figure 7.	1-9
X	US 5,742,905 A (PEPE et al.) 21 April 1998, Col. 5, lines 54-67, Col. 6, lines 1-19.	1,4,10
X	US 5,742,668 A (PEPE et al.) 21 April 1998, Col. 5, lines 30-68.	1,4,10
X	US 5,568,540 A (GRECO et al.) 22 October 1996, Col. 2, lines 6-28.	1,4,10
X	US 5,675,507 A (BOBO, II) 07 October 1997, Col. 5, lines 1-40 and Figures 4-6.	1-14
A,E	US 6,023,345 A (BLOOMFIELD) 08 February 2000, Figure 8.	10-14

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 23 FEBRUARY 2000	Date of mailing of the international search report 15 MAR 2000
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer Allan Hoosain For Virginia Morgan Telephone No. (703) 305-4012

Form PCT/ISA/210 (second sheet)(July 1992)*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL99/00591

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,E	US 6,025,931 A (BLOOMFIELD) 15 February 2000, Figure 8.	10-14
A,P	US 5,848,137 A (HSIAO) 08 DECEMBER 1998, Col. 2, lines 1-45.	1,10,14

INTERNATIONAL SEARCH REPORT

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PCT/IL99/00591

A. CLASSIFICATION OF SUBJECT MATTER:
US CL :

379/67.1, 88.13, 88.17, 88.25, 93.23, 100.06, 110.01; 455/415,417,445, 461; 358/402,442; 709/204,206